

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Withdrawn) A laser irradiation apparatus comprising:

a first laser oscillator generating a pulse oscillation of first laser light having a wavelength at which an absorption coefficient to a semiconductor film is $1 \times 10^4 \text{ cm}^{-1}$ or more;

means for controlling a shape and a position of a region irradiated by the first laser light;

a second laser oscillator generating a continuous wave oscillation of second laser light;

means for controlling a shape and a position of a region irradiated by the second laser light so as to overlap with the region irradiated by the first laser light; and

means for controlling positions of the region irradiated by the first laser light and the region irradiated by the second laser light relative to the semiconductor film,

wherein the region irradiated by the first laser light and the region irradiated by the second laser light are overlapped in such a way that the region irradiated by the first laser light falls within the region irradiated by the second laser light.

2. (Withdrawn) A laser irradiation apparatus comprising:

a first laser oscillator generating a pulse oscillation of first laser light having a wavelength not longer than that of visible light;

means for controlling a shape and a position of a region irradiated by the first laser light;

a second laser oscillator generating a continuous wave oscillation of second laser light;

means for controlling a shape and a position of a region irradiated by the second laser light so as to overlap with the region irradiated by the first laser light; and

means for controlling positions of the region irradiated by the first laser light and the region irradiated by the second laser light relative to the semiconductor film,

wherein the region irradiated by the first laser light and the region irradiated by the second laser light are overlapped in such a way that the region irradiated by the first laser light falls within the region irradiated by the second laser light.

3. (Withdrawn) A laser irradiation apparatus according to claim 1,
wherein the first laser light has a second harmonic.

4. (Withdrawn) A laser irradiation apparatus according to claim 1,
wherein the second laser light has a fundamental wave.

5. (Withdrawn) A laser irradiation method comprising the step of:

irradiating first laser light generated in a pulse oscillation having a wavelength at which an absorption coefficient to a semiconductor film is $1 \times 10^4 \text{ cm}^{-1}$ or more and second laser light generated in a continuous wave oscillation to the semiconductor film,

wherein when the first laser light and the second laser light are irradiated, a region irradiated by the first laser light and a region irradiated by the second laser light are overlapped in such a way that the region irradiated by the first laser light falls within the region irradiated by the second laser light.

6. (Withdrawn) A laser irradiation method comprising the step of:

irradiating first laser light generated in a pulse oscillation having a wavelength not longer than that of visible light and second laser light generated in a continuous wave oscillation to a semiconductor film,

wherein when the first laser light and the second laser light are irradiated, a region irradiated by the first laser light and a region irradiated by the second laser light are overlapped in such a way that the region irradiated by the first laser light falls within the region irradiated by the second laser light.

7. (Withdrawn) A laser irradiation method comprising the step of:

irradiating first laser light generated in a pulse oscillation having a wavelength not longer than that of visible light and second laser light generated in a continuous wave oscillation to a semiconductor film,

wherein when the first laser light and the second laser light are irradiated, a region irradiated by the first laser light and a region irradiated by the second laser light are overlapped in such a way that the region irradiated by the first laser light falls within the region irradiated by the second laser light; and

wherein the semiconductor film melts in the region irradiated by the first laser light.

8. (Withdrawn) A laser irradiation method comprising the step of:

irradiating first laser light generated in a pulse oscillation having a wavelength not longer than that of visible light and second laser light generated in a continuous wave oscillation to a semiconductor film,

wherein when the first laser light and the second laser light are irradiated, a region irradiated by the first laser light and a region irradiated by the second laser light are overlapped in such a way that the region irradiated by the first laser light falls within the region irradiated by the second laser light; and

wherein in the region irradiated by the first laser light, the semiconductor film melts partially by the first laser light and the semiconductor film melts completely by the second laser light.

9. (Withdrawn) A laser irradiation method according to claim 5,
wherein the first laser light has a second harmonic.

10. (Withdrawn) A laser irradiation method according to claim 5,
wherein the second laser light has a fundamental wave.

11. (Currently Amended) A method for manufacturing a semiconductor device
comprising the step of:

crystallizing a semiconductor film formed over an insulating surface by irradiating
first laser light generated in a pulse oscillation having a wavelength at which an
absorption coefficient to the semiconductor film is $1 \times 10^4 \text{ cm}^{-1}$ or more and second laser
light generated in a continuous wave oscillation,

wherein when the first laser light and the second laser light are irradiated, a
region irradiated by the first laser light and a region irradiated by the second laser light
are overlapped in such a way that the region irradiated by the first laser light falls within
the region irradiated by the second laser light, and

wherein the second laser light is a solid-state laser light and has a fundamental
wave.

12. (Withdrawn) A method for manufacturing a semiconductor device
comprising the step of:

crystallizing a semiconductor film formed over an insulating surface by irradiating
first laser light generated in a pulse oscillation having a wavelength not longer than that
of visible light and second laser light generated in a continuous wave oscillation,

wherein when the first laser light and the second laser light are irradiated, a
region irradiated by the first laser light and a region irradiated by the second laser light
are overlapped in such a way that the region irradiated by the first laser light falls within
the region irradiated by the second laser light.

13. (Withdrawn) A method for manufacturing a semiconductor device comprising the step of:

crystallizing a semiconductor film formed over an insulating surface by irradiating first laser light generated in a pulse oscillation having a wavelength not longer than that of visible light and second laser light generated in a continuous wave oscillation,

wherein when the first laser light and the second laser light are irradiated, a region irradiated by the first laser light and a region irradiated by the second laser light are overlapped in such a way that the region irradiated by the first laser light falls within the region irradiated by the second laser light; and

wherein the semiconductor film melts in the region irradiated by the first laser light.

14. (Withdrawn) A method for manufacturing a semiconductor device comprising the step of:

crystallizing a semiconductor film formed over an insulating surface by irradiating first laser light generated in a pulse oscillation having a wavelength not longer than that of visible light and second laser light generated in a continuous wave oscillation,

wherein when the first laser light and the second laser light are irradiated, a region irradiated by the first laser light and a region irradiated by the second laser light are overlapped in such a way that the region irradiated by the first laser light falls within the region irradiated by the second laser light; and

wherein in the region irradiated by the first laser light, the semiconductor film melts partially by the first laser light and the semiconductor film melts completely by the second laser light.

15. (Previously Presented) A method for manufacturing a semiconductor device according to claim 11,

wherein the first laser light has a second harmonic.

16. (Canceled)

17. (Previously Presented) A method for manufacturing a semiconductor device according to claim 11, further comprising the step of performing a heating process to the semiconductor film.

18. (Original) A method for manufacturing a semiconductor device according to claim 17,
wherein the heating process is performed using a gas RTA.

19. (Withdrawn) A laser irradiation apparatus according to claim 2,
wherein the first laser light has a second harmonic.

20. (Withdrawn) A laser irradiation apparatus according to claim 2,
wherein the second laser light has a fundamental wave.

21. (Withdrawn) A laser irradiation method according to claim 6,
wherein the first laser light has a second harmonic.

22. (Withdrawn-Currently Amended) A laser irradiation method according to claim 6,
wherein the second laser light has a fundamental wave.

23. (Withdrawn) A laser irradiation method according to claim 7,
wherein the first laser light has a second harmonic.

24. (Withdrawn) A laser irradiation method according to claim 7,
wherein the second laser light has a fundamental wave.

25. (Withdrawn) A laser irradiation method according to claim 8,
wherein the first laser light has a second harmonic.

26. (Withdrawn) A laser irradiation method according to claim 8,
wherein the second laser light has a fundamental wave.

27. (Withdrawn) A method for manufacturing a semiconductor device according
to claim 12,
wherein the first laser light has a second harmonic.

28. (Withdrawn) A method for manufacturing a semiconductor device according
to claim 12,
wherein the second laser light has a fundamental wave.

29. (Withdrawn) A method for manufacturing a semiconductor device according
to claim 12,
wherein the semiconductor film formed over the insulating surface is crystallized
by a heating process using a catalyst metal.

30. (Withdrawn) A method for manufacturing a semiconductor device according
to claim 29,
wherein the heating process is performed using a gas RTA.

31. (Withdrawn) A method for manufacturing a semiconductor device according
to claim 13,

wherein the first laser light has a second harmonic.

32. (Withdrawn) A method for manufacturing a semiconductor device according to claim 13,

wherein the second laser light has a fundamental wave.

33. (Withdrawn) A method for manufacturing a semiconductor device according to claim 13,

wherein the semiconductor film formed over the insulating surface is crystallized by a heating process using a catalyst metal.

34. (Withdrawn) A method for manufacturing a semiconductor device according to claim 33,

wherein the heating process is performed using a gas RTA.

35. (Withdrawn) A method for manufacturing a semiconductor device according to claim 14,

wherein the first laser light has a second harmonic.

36. (Withdrawn) A method for manufacturing a semiconductor device according to claim 14,

wherein the second laser light has a fundamental wave.

37. (Withdrawn) A method for manufacturing a semiconductor device according to claim 14,

wherein the semiconductor film formed over the insulating surface is crystallized by a heating process using a catalyst metal.

38. (Withdrawn) A method for manufacturing a semiconductor device according to claim 37,

wherein the heating process is performed using a gas RTA.

39. (Withdrawn-Currently Amended) A method for manufacturing a semiconductor device comprising the step of:

crystallizing a semiconductor film formed over an insulating surface by irradiating first laser light generated in a pulse oscillation having a wavelength, at which an absorption coefficient to the semiconductor film is $1 \times 10^4 \text{ cm}^{-1}$ or more and which is not longer than that of visible light, and by irradiating second laser light generated in a continuous wave oscillation,

wherein when the first laser light and the second laser light are irradiated, a region irradiated by the first laser light and a region irradiated by the second laser light are overlapped in such a way that the region irradiated by the first laser light falls within the region irradiated by the second laser light, and

wherein the second laser light is a solid-state laser light and has a fundamental wave.

40. (Withdrawn-Currently Amended) A method for manufacturing a semiconductor device comprising the step of:

adding a catalyst element in a semiconductor film;

performing a heating process using a gas RTA after adding the catalyst element;

and

crystallizing [[a]] the semiconductor film formed over an insulating surface by irradiating first laser light generated in a pulse oscillation having a wavelength at which an absorption coefficient to the semiconductor film is $1 \times 10^4 \text{ cm}^{-1}$ or more and second laser light generated in a continuous wave oscillation,

wherein when the first laser light and the second laser light are irradiated, a region irradiated by the first laser light and a region irradiated by the second laser light are overlapped in such a way that the region irradiated by the first laser light falls within the region irradiated by the second laser light, and

wherein the second laser light is a solid-state laser light and has a fundamental wave.

41. (Withdrawn-Currently Amended) A method for manufacturing a semiconductor device comprising the step of:

adding a catalyst element in a semiconductor film;

performing a heating process using a gas RTA after adding the catalyst element;

and

crystallizing [[a]] the semiconductor film formed over an insulating surface by irradiating first laser light generated in a pulse oscillation having a wavelength, at which an absorption coefficient to the semiconductor film is $1 \times 10^4 \text{ cm}^{-1}$ or more and which is not longer than that of visible light, and by irradiating second laser light generated in a continuous wave oscillation,

wherein when the first laser light and the second laser light are irradiated, a region irradiated by the first laser light and a region irradiated by the second laser light are overlapped in such a way that the region irradiated by the first laser light falls within the region irradiated by the second laser light, and

wherein the second laser light is a solid-state laser light and has a fundamental wave.

42. (Withdrawn) A method for manufacturing a semiconductor device according to claim 39,

wherein the first laser light has a second harmonic.

43. (Canceled)

44 (Withdrawn) A method for manufacturing a semiconductor device according to claim 39 further comprising the step of performing a heating process to the semiconductor film.

45 (Withdrawn) A method for manufacturing a semiconductor device according to claim 44,
wherein the heating process is performed using a gas RTA.

46. (Withdrawn) A method for manufacturing a semiconductor device according to claim 40,
wherein the first laser light has a second harmonic.

47. (Canceled)

48. (Withdrawn) A method for manufacturing a semiconductor device according to claim 41,
wherein the first laser light has a second harmonic.

49. (Canceled)

50. (Withdrawn) A method for manufacturing a semiconductor device according to claim 39,
wherein the semiconductor film melts in the region irradiated by the first laser light.

51. (Withdrawn) A method for manufacturing a semiconductor device according to claim 39,

wherein the semiconductor film melts partially by the first laser light in the region irradiated by the first laser light, and the semiconductor film melts completely by the second laser light.

52. (Withdrawn) A method for manufacturing a semiconductor device according to claim 40,

wherein the semiconductor film melts in the region irradiated by the first laser light.

53. (Withdrawn) A method for manufacturing a semiconductor device according to claim 40,

wherein the semiconductor film melts partially by the first laser light in the region irradiated by the first laser light, and the semiconductor film melts completely by the second laser light.

54. (Withdrawn) A method for manufacturing a semiconductor device according to claim 41,

wherein the semiconductor film melts in the region irradiated by the first laser light.

55. (Withdrawn) A method for manufacturing a semiconductor device according to claim 41,

wherein the semiconductor film melts partially by the first laser light in the region irradiated by the first laser light, and the semiconductor film melts completely by the second laser light.